Table of Contents

This page is intentionally left blank for double-sided purposes.

3. Job Hazard Pre-Survey

Introduction

This lesson shows you how to perform a job hazard pre-survey of a pole to identify potential hazards. The pre-survey includes inspecting environmental factors, pole depth, and whether it has been treated with chemicals.

Importance

It is important that you are aware of possible risks with poles. Climbing an unsafe pole could cause you, or others, injury and may damage equipment or property.

Objectives

After completing this lesson, you will be able to:

- Visually inspect a pole for potential hazards
- Interpret a pole brand
- Calculate the depth of a pole and determine if it is safe to climb
- Describe what is a chemically treated pole
- List the guidelines for working with chemically treated poles

Prerequisites

Prior to starting this training, you should have mastered the Personal Protection lesson

Outline

This lesson includes the following topics:

- Visual Pole Inspection
- Pole Brands
- Determining Pole Depth
- Chemically Treated Poles
- Working with Chemically Treated Poles

Visual Pole Inspection

Introduction

This topic describes how to visually inspect a pole for potential hazards. Do **not** climb an unsafe pole that may cause injury to yourself and damage to equipment.

Hazards

You **must** exercise caution and stay alert anytime there are any hazards on or around the pole.

Some of these hazards, such as shell rot and woodpecker holes are hazards you **cannot** correct. Others you can correct, such as bent, loose, or missing pole steps and debris around the pole.

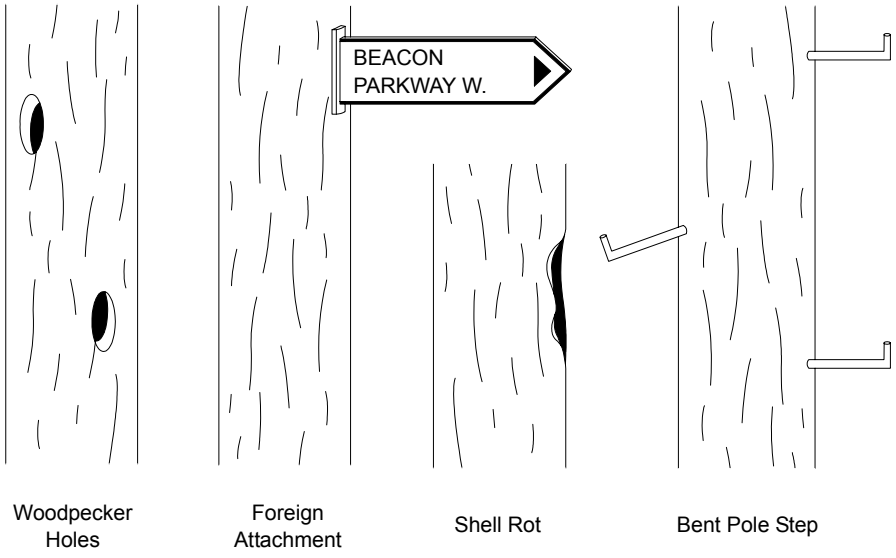
Avoid obstructions, such as an open window from a building near the pole, when you climb.

Types of Pole Conditions

The important thing before climbing a pole is to stay alert and check for any of the following conditions:

- Excessive leaning
- Insufficient depth setting
- Evidence of collision damage
- Fungus growth
- Termites or carpenter ants
- Bent, loose or missing pole steps
- Weather cracks
- Woodpecker holes
- Debris around the pole
- Foreign attachments
- Obstructions
- Ice on the pole

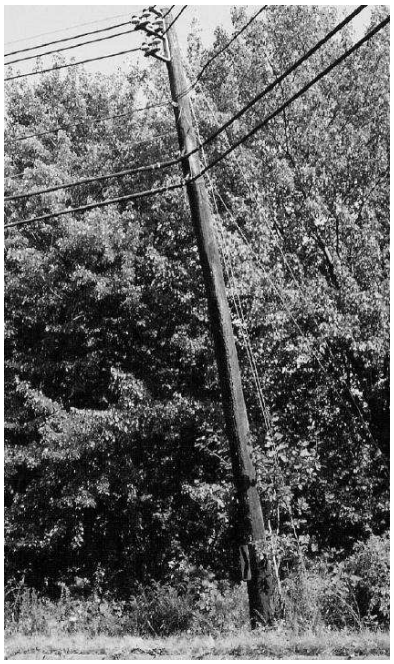
- Power hazards
- Lightning or fire damage
- Compressed wood
- Chemical treated, such as Mitc-Fume®
- Shell rot



Examples of pole conditions

?
QUESTION

Identify the possible climbing hazards with the poles shown here.



a) _____

b) _____

c) _____

_____

_____

Task: *Group discussion*

Time required: *10 minutes*

Instruction: *Ask students to look at the poles shown here with different unsafe elements. Get them to discuss the potential hazards and their hazardous conditions.*

Correct answer:

a) What? *Excessive leaning*

Why? *It is unstable and may **not** hold additional weights of your body and equipment.*

b) What? *Foreign attachment*

Why? *It may be in the way when gaffing the pole. Also, it may harm you if you fall onto it. In addition, it may contain potential electrical hazards.*

c) What? *Cracked pole*

Why? *It is unstable and will **not** hold your weight. The students will learn how to handle this type of unsafe pole in the Testing for Physical Hazards lesson.*

Visually inspect a pole. Verbally state the items to look for in an inspection and determine whether the pole is safe to climb.

Task: *Group activity*

Time: *15 minutes*

Equipment required: *A number of poles, one that is safe and others with hazards*

Instruction: *Divide the students into groups (of three or four). Get the groups to visually inspect a pole. The group should list all potential hazards and identify any possible hazards on the pole that they inspected.*

Pole Brands

Introduction

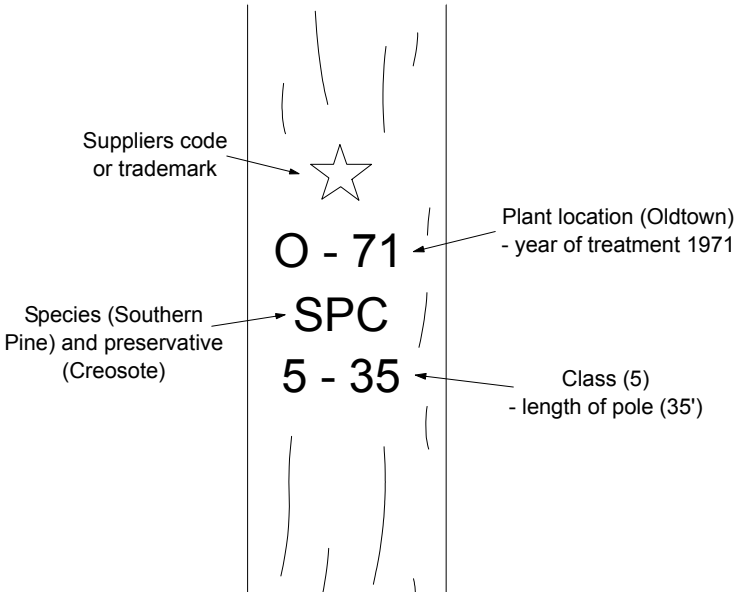
All Verizon poles have what is known as a “brand mark” on them. The brand mark gives information about the pole and is used to determine whether the pole is set deep enough in the ground. This topic will help you to interpret the brand mark on a pole.

What is a Brand Mark?

A brand mark contains

- supplier's code or trademark
- plant location and year of treatment
- tree species and preservative
- class and length of pole (Class is a number relating to the pole diameter measured at the top of the pole)

The year of treatment is important because you will check for decay and pay close attention to early treated poles.



Brand mark interpretation

Legend for Species of Trees

Code	Type of Tree Species
WC	Western Red Cedar
WP	Ponderosa Pine
JP	Jack Pine
LP	Lodgepole Pine
NP	Red Pine
DF	Douglas Fir
SP	Southern Pine
WL	Western Larch

Legend for Types of Pole Treatment

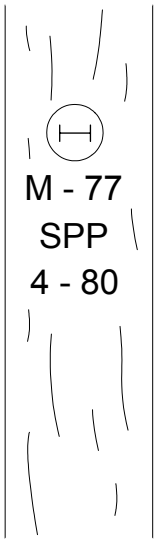
Code	Preservative Treatment	Used on Timber Species
A	Creosote Pentachlorophenol	SP
C	Creosote	SP
G	Pentachlorophenol in LP Gas (Cellon Process)	WP, LP, DF, SP
P	Pentachlorophenol in Petroleum	All
S	CHEMONITE	(Discontinued code)
SB	Ammoniacal Copper Arsenite (ACA-CHEMONITE)	All
SC	Chromated Copper Arsenate (CCA) Type A	All
SK	CCA Type C	All

Note to Instructor:

If possible, show slides or photos of different pole brands used by Verizon.

?
QUESTION

Identify the components of the pole brand shown here.



Species _____

Preservative _____

Plant location _____

Year of treatment _____

Class of pole _____

Length of pole _____

Task: *Individual activity*

Time allocation: *5 minutes*

Instructions: *Students write in the answer in the blank spaces provided.*

Correct answer:

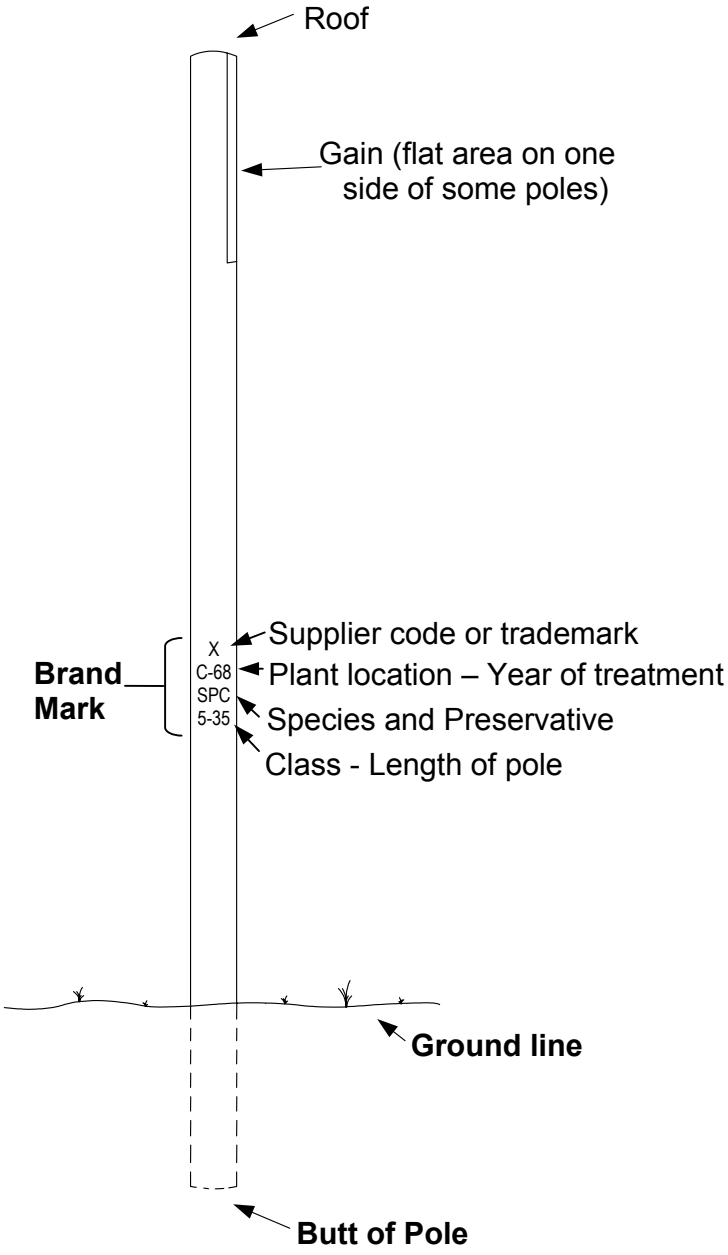
Species:	*SP – Southern Pine*
Preservative:	*Pentachlorophenol in Petroleum*
Plant location:	*M*
Year of treatment:	*1977*
Class of pole:	*4*
Length of pole:	*80*

Group review: *Ask students for their answers.*

Determining the Safe Pole Depth

Introduction

This topic describes how to calculate a pole's depth. It is important that you can determine the pole depth for safe climbing. The insufficient depth setting of a pole could create an unstable condition that is unsafe to climb.



Anatomy of a pole

Locating the Distance of a Brand Mark

The brand mark is located either at 10 feet or 14 feet from the butt of the pole depending on the length of the pole.

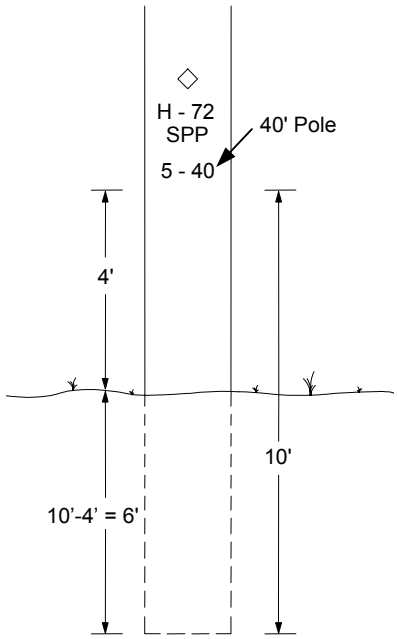
Table 3.1 Locations of the Brand Marks based on the Length of Poles

Pole Length	Distance between 'Brand Mark' to 'Butt of the Pole'
16-50 feet	10 feet
55 feet or longer	14 feet

Calculating Pole Depth

To determine the depth a pole is set in the ground, measure the distance from the ground to the brand mark, and then subtract that distance from either 10 or 14, depending on the length of the pole.

For example, the brand mark on the pole below indicates the pole length of 40 feet. From the table above, the distance between the brand mark and the butt of the pole is 10 feet. The measured distance between the brand mark and the ground line is 4 feet. Therefore, this pole is set 10-4 = 6 feet below the ground line.



The Safe Depth of a Pole Setting

After determining the depth a pole is in the ground, verify that the pole is at a safe depth.

A quick method for finding the safe depth setting is to **add 2 to the first digit of the pole length** and move the second digit as a decimal point.

For example, a 40-foot pole **must** be set 2+4.0 = 6.0 feet in firm ground. For a 40-foot pole, adjust the number to 4.0, and then add 2 to that number. Therefore, the safe depth of this pole setting is 6.0 feet.

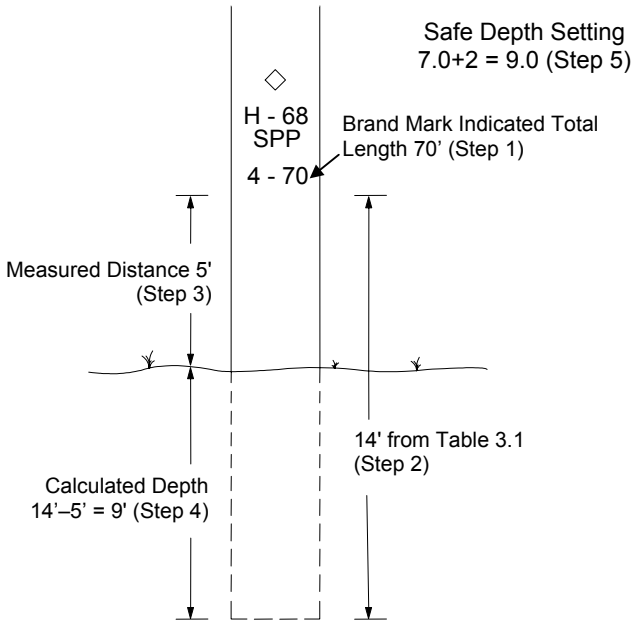
Similar to a 55-foot pole, adjust the pole length to one decimal-point number of 5.5. Then, add 2 to 5.5 (5.5+2). Therefore, you have 7.5 feet setting of a 55-foot pole for safe pole depth.

Steps in Determining the Safe Depth of a Pole Setting

Step	Action
1	Determine the total length of the pole by checking its brand mark. *(Suppose this pole is listed 70 feet in length).*
2	Check table 3.1 to determine the brand mark location (A). *(In this case, it is 14 feet from the butt of the pole).*
3	Measure the distance (B) from the brand mark to the ground. *(Suppose the distance is 5 feet).*
4	Calculate the pole depth by subtracting the measured distance from the brand mark location (A - B). *(In this case, the pole depth from the ground line to the pole butt is 14 - 5 = 9).*
5	Determine the safe depth by adjust the total pole length to the one decimal point (C) and add 2 to it (C + 2.) *(In this case, C = 7.0 and the safe depth of the pole setting is 7.0 + 2 = 9.0.)*
6	Compare the numbers of the calculated pole depth (step 4) to the safe depth of pole setting (step 5.) If the number from step 4 is equal or higher than the number from step 5, the pole should be set properly at the correct depth. Otherwise, the pole is unsafe. *(In this case, the result of step 4 is equal to step 5. Therefore, the pole is set at the proper depth).*

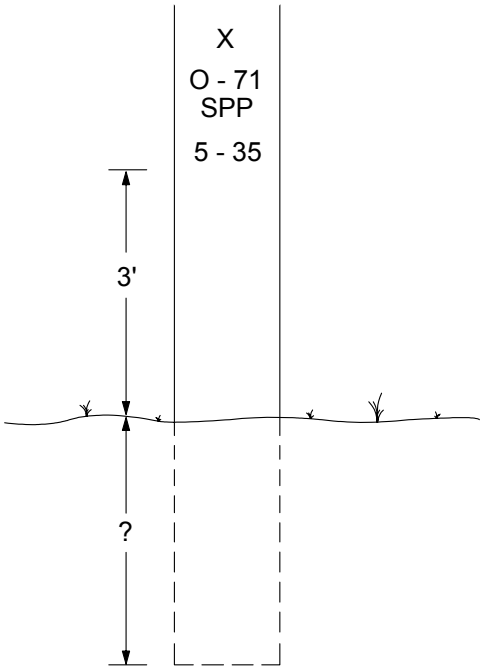
Note to Instructor:

Use a blackboard or flipchart to write out the calculations in the example. Further examples of calculations may be needed if students are having difficulty with the calculations.



?
QUESTION

Calculate the pole depth and determine if this pole is safe or unsafe to climb.



Task: *Individual task*

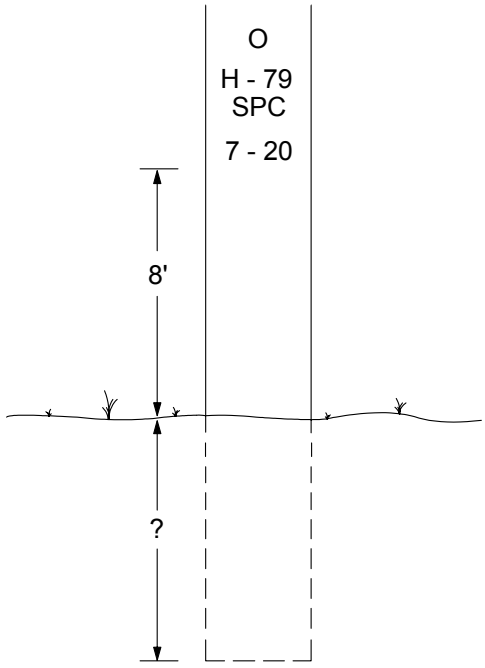
Time allocation: *10 minutes*

Instruction: *Students **must** indicate whether the pole is safe or unsafe in the space provided.*

Correct answer:
7 feet deep (Safe depth setting 3.5 +2.0= 5.5)
Safe (Actual setting 10 [from table] –3 = 7 feet which exceed the safe dept setting)

?
QUESTION

Calculate the depth of this pole and determine if it is safe or unsafe to climb.



Task: *Individual task*

Time allocation: *10 minutes*

Instruction: *Students **must** indicate whether the pole is Safe or Unsafe in the space provided.*

Correct answer:
2 feet deep (Safe dept setting 2 + 2.0 = 4.0 feet)
Unsafe (Actual setting 10 [from table] – 8 = 2 feet which is less than the safe dept)

Chemically Treated Poles

Introduction

In your day-to-day work, you will come across poles that have been treated with chemicals. This topic describes why poles are treated.

Chemically Treated Poles

The purpose of pole treatment is to extend the useful life of a pole by repelling insects, bacteria, and other microorganisms that feed on wood poles.

Unfortunately, like virtually all preservatives, the chemicals that repel the insects, bacteria, and other microorganisms may cause irritation to humans.

Remedial Re-Treatment of Poles

Current Verizon policy has restricted remedial field chemical re-treatment of poles due to expense and lack of conclusive data supporting the effectiveness of re-treatment.

Verizon employees are not authorized to perform any type of remedial re-treatment to poles. These treatments involve the handling of restricted-use pesticides and may only be performed by State-licensed and certified applicators.

However, other pole ownership may have used re-treatment processes. Current and future contracts to provide remedial re-treatment services on joint-use or joint-owned poles will require review with both the Verizon Safety, Health and Environment Organization and the Verizon OSP Provisioning & Service Assurance Organizations.

Quality Control

All treated poles to be used by Verizon companies will be subjected to a strict quality control program whereby any treated poles that do **not** meet specifications are to be rejected.

The emphasis on quality control should help reduce the incidence of “leaking” poles. Current vendor contracts require product inspection before shipment to distribution facilities and an additional inspection before delivery at Verizon locations.

?
QUESTION

Identify whether each of these statements is true or false.

True/False Chemicals can extend the life of a pole

True/False Chemically treated poles will **not** cause irritation to humans

True/False Employees can perform remedial re-treatment to poles

True/False Quality control helps reduce the incidents of leakage

Task: *Individual activity*

Time: *5 minutes*

Instruction: *Students fill out the answers in their student books.*

Correct answer:

- *True Chemicals can extend the life of a pole*
- *False Chemically treated poles will **not** cause irritation to humans*
- *False Employees can perform remedial re-treatment to poles*
- *True Quality control helps reduce the incidents of leakage*

Group review: As*k students for their answers.*

Working with Chemically Treated Poles

Introduction

As with any treated wood product, employees **must** follow corporate safety procedures to avoid exposure or injury when working with chemically treated poles. This topic describes guidelines on how to protect you from exposure.

Guidelines for Working with Chemical Poles

Verizon has requirements associated with working on all poles:

- Wear long sleeve shirts, long pants, eye protection, and leather work gloves to avoid skin contact with the wood surface – direct skin contact with treated wood may cause skin irritation.

Long sleeves, eye protection, and leather work gloves

- If leather work gloves become damaged or heavily soiled, they should be replaced. Gauntlet-style gloves **must** be worn when handling poles when no electrical hazards are present.
- When handling poles in power and/or when required to wear insulating and leather protector gloves, employees will wear gloves as directed to manage electrical protection.
- Clean and/or inspect the insulating and leather protector gloves. If the leather protectors are excessively soiled with oils, such as creosote, they **must** be either cleaned or replaced.
- Soap and water can be used to remove any treated wood residue from the skin. The first aid cream found in Verizon's first aid kits may be used to lessen skins redness or irritation following the directions on the label.

- Employees who experience skin irritation or a burn resulting from exposure to any treated wood **must** report the condition to their supervisor.

  Note: Supervisors are required to complete the Employee Injury and Illness report within 24 hours of any incident via the eWeb at http://safety.verizon.com/safety/incident.shtml, or by calling 1-800-386-9639, option #1.

- Employees should use sunscreen (before skin is exposed to creosote/sunlight) as necessary to lessen the effect of photosensitivity.
- Wearing a disposable dust mask is recommended when sawing wood.
- Verizon provides disposable TYVEK® jackets and coveralls for employee use when working on poles that may be found "Wet, Bleeding or Weeping" from excessive treatments such as creosote, penta and/or other pole treatment applications. Pyrolon® disposable protective wear should **not** be used when handling treated wood. TYVEK® jackets, **not** TYVEK® coveralls, should be worn when climbing any pole via climbers and/or stepped poles.

TYVEK® coveralls

To order TYVEK® jackets:

Verizon East SSI / PID (fBA)	Verizon West ITEM ID PART NUM (fGTE)
700253855 – S	929439 L1216 – S
700253856 – M	929440 L1216 – M
700253857 – L	929441 L1216 – L
700253858 – XL	929436 L1216 – XL
700253859 – XXL	929437 L1216 – XXL
700253860 – XXXL	929438 L1216 - XXXL

To order TYVEK® coveralls:

Verizon East SSI / PID (fBA)	Verizon West ITEM ID PART NUM (fGTE)
700248182 – size L, orange	913613 – size L, orange
700248183 – size XL, orange	913614 – size XL, orange
700248184 – size XXL, orange	913615 – size XXL, orange
700248185 – size XXXL, orange	913616 – size XXXL, orange
781000286 – size M, white	913617 – size M, white
728001611 – size L, white	913618 – size L, white
900528639 – size XL, white	913619 – size XL, white
900528621 – size XXL, white	913620 – size XXL, white
790012884 – size XXXL, white	913621 – size XXXL, white

- If you **must** access an existing pole that is “Wet, Bleeding or Weeping” from any treatment application, use aerial lift equipment or a ladder.
- If you are **not** able to use an aerial lift or a ladder, contact your supervisor for guidance. Supervisors will manage the work function in an appropriate manner and/or contact safety, Health, and Environment hotline, 1-800-386-9639, option #5 for assistance.
- Do **not** attempt to use climbers when working on poles that are treated with CCA (unless trained, using climbers designed for CCA pole climbing) and found in some areas when jointly used/owned with power companies. Primary access to plant on a CCA treated pole is via aerial lift or ladder.

Dress in the appropriate apparel for working with chemically treated poles.

Task: *Individual task*

Time allocation: *10 minutes*

Equipment required:

- *TYVEK® coveralls or TYVEK® jackets*
- *Leather work gloves*
- *PPE*

Instruction: *Instruct students to dress up in the appropriate apparel for climbing a chemically treated pole. Students should include all appropriate PPE equipment.*

Review: *Inspect each student to make sure that they have the appropriate apparel, including PPE, and that each student's skin is* ***not*** *exposed.*

Lesson Summary

Review

This lesson describes the job hazard pre-survey. This survey identifies the condition of the pole to determine whether it is safe to climb. The condition of the pole also includes calculating the pole depth and handling a chemical treated pole.

You should now be able to:

- Visually inspect a pole for potential hazards
- Interpret a pole brand
- Calculate the depth of a pole and determine whether it is safe to climb
- Describe a chemical treated pole
- List the guidelines for working with chemically treated poles

It is important that you are aware of possible risks when handling poles. Climbing an unsafe pole could cause you, or others, injury and may damage equipment or property.

Next Steps

Now that you have completed this lesson, next you should proceed to the Checking for Electrical Hazards lesson.

Additional Resources


REFERENCE

For more information related to this lesson, you should refer to:

- Method & Procedure National Operations, Doc No. 2001-00435-OSP, Issue Date: 6-29-2001, “Creosote-Pressure Treated Poles”
- Method & Procedure National Operations, Doc No. 2002-00923-OSP, Issue: B, Issue Date: 1-23-2003, “Pole Treatment Precautions”

Check-Point

1. Inspect this pole and note any potential hazards.

_____
_____
_____
_____

Answers:

Check that the student has checked the pole completely.

Use a pole with hazards to test if the student recognizes the unsafe conditions.

2. Visually inspect this pole and note any unsafe conditions that you find.

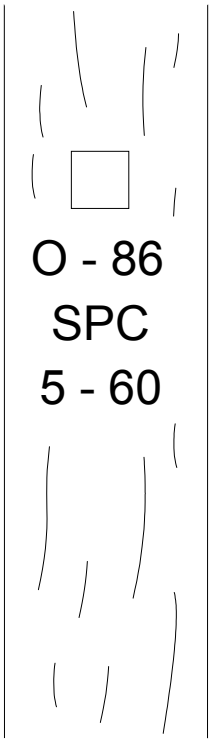
_____
_____
_____
_____

Answers:

Check that the student has checked the pole completely.

Use a pole with hazards to test if the student recognizes the unsafe conditions.

3. Write down the meaning of the components of this pole brand in the space provided.



Species _____

Preservative _____

Plant location _____

Year of treatment _____

Class of pole _____

Length of pole _____

Answers:

Species: SP – Southern Pine

Preservative: C – creosote

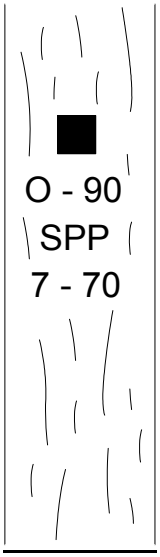
Plant location: O – Old town

Year of treatment: 1986

Class of pole: 5

Length of pole: 60

4. Identify the features of the pole that has the pole brand shown here by selecting the correct options below:



Options

A. It has been treated with creosote

B. It is 90 feet long

C. It is a class 7 pole

D. It is made from Southern Pine

E. It was made in 1970

Answers:

C.·It is a class 7 pole

D. It is made from Southern Pine

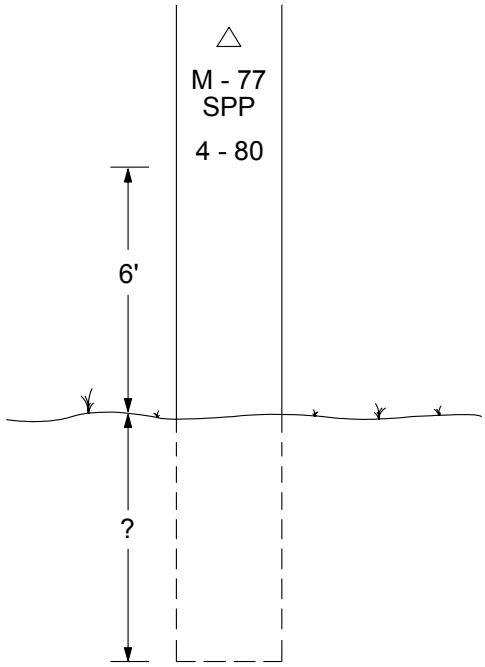
5. What is the depth in feet of this pole? _____

Is this pole safe or unsafe to climb? _____

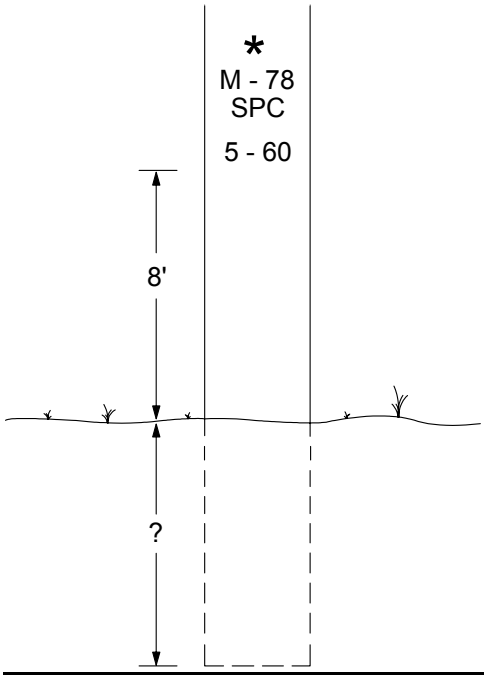
Answers:

·*8 feet deep*

·*Unsafe*



6. Calculate the depth in feet of the pole and determine if it is safe to climb.



Write your answers in the space provided.

Answers:

6 feet deep

Unsafe

7. If a brand mark on a 50-foot Verizon pole is 6 feet from ground level, the pole is _____.

Indicate your answer by circling or underlining the correct option.

Options

A. Set 8 feet deep and is safe to climb
B. Set 8 feet deep and is unsafe to climb
C. Set 4 feet deep and is safe to climb
D. Set 4 feet deep and is unsafe to climb

Answers:

D. Set 4 feet deep and is unsafe to climb.

8. If a brand mark on a 55-foot Verizon pole is 6 feet from ground level, the pole is _____.

Indicate your answer by circling or underlining the correct option.

Options

A. Set 8 feet deep and is safe to climb
B. Set 8 feet deep and is unsafe to climb
C. Set 4 feet deep and is safe to climb
D. Set 4 feet deep and is unsafe to climb

Answers:

A. Set 8 feet deep and is safe to climb.

9. Why does Verizon treat poles with chemicals?

Write your answer in the space provided.

_____
_____
_____
_____

Answers:

To extend the useful life of the poles by repelling insects, bacteria, and other microorganisms that feed on wood poles.

10. What is a chemically treated pole?

Write your answer in the space provided.

_____
_____
_____

Answers:

A pole that has been chemically treated with preservatives to extend the useful life of the pole.

11. Identify the guidelines you should follow when working with chemically treated poles by selecting the correct options below.

    Indicate your answers by circling or underlining the correct options.

    A. Wear long-sleeve shirts, long pants, eye protection, and hand protection to avoid skin contact with the wood surface

    B. If work gloves become damaged or heavily soiled, you should clean them before use

    C. Employees who experience skin irritation should apply sun cream and then continue working

    D. Soap and water can be used to remove any treated wood residue from the skin

    E. If you **must** access an existing pole that is “Wet, Bleeding or Weeping” from any treatment application, use aerial lift equipment or a ladder

***Answers**:*

A. Wear long sleeve shirts, long pants, and gloves to avoid skin contact with the wood surface

D. Soap and water can be used to remove any treated wood residue from the skin

*E. If you **must** access an existing pole that is “Wet, Bleeding or Weeping” from any treatment application, use aerial equipment or a ladder*

12. List three things that you can do to limit the contact of creosote on their skin?

Write your answer in the space provided.

_____
_____
_____
_____

Answers:

• Wear long sleeve shirts, long pants, eye protection, and hand protection to avoid skin contact with the wood surface.

• Use sunscreen (before skin is exposed to creosote/sunlight) as necessary to lessen the effect of photosensitivity

• Wear disposable TYVEK® jackets or TYVEK® coveralls when working on poles that may be found "Wet, Bleeding or Weeping" from excessive treatments such as creosote or other pole treatment applications

*• If you **must** access an existing pole that is "Wet, Bleeding or Weeping" from any treatment application, use aerial lift equipment or a ladder*